

Possible Utilization of Real-time Earthquake Information as an Early Warning Announcing before S-Wave Arrival

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The disaster-prevention system computes arrival times of S waves and seismic intensities at the target points using Real-time Earthquake Information: the location, origin time and magnitude data of an earthquake occurred. The Real-time Earthquake Information (Nowcast Earthquake Information) is now tentatively delivered from the Japan Meteorological Agency (JMA). The calculation result is used to decide automatic or half-automatic control items such as stopping or slowing down elevators or fuel suspension for preventing fire before S-wave reach.

It is effective to estimate margin times for S-wave arrival and the intensity of earthquake motion in order to design the control system. The delay time for data communications and processing should also be considered because there is little time left to utilize the information as an early warning announcement before the arrival of seismic waves.

In this study, we examine the relationships between seismic intensities and margin times from the information reception to S-wave arrival using focal parameters by the Real-time Earthquake Information System. Also, we compare the intensities and margin times which were estimated using the Real-time Earthquake Information System with those which were actually observed. We will discuss about the required accuracy of focal parameters (location, magnitude and origin time) to utilize the information for mitigating seismic hazards: protecting human lives and reducing socioeconomic damages.

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